

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for the catalytic hydrodealkylation alone of hydrocarbon compositions comprising one or more C₈-C₁₃ alkylaromatic compounds, optionally in a mixture with C₄-C₉ aliphatic and cycloaliphatic products, including the processing in continuous of said hydrocarbon compositions, in the presence of water, with a catalyst consisting of a ZSM-5 zeolite having a molar ratio Si/Al ranging from 5 to 35, modified with at least one metal selected from ~~those belonging to groups IIB, VIB and VIII~~ the group consisting of a metal of group IIB, a metal of group VIB and a metal of group VIII, at a temperature ranging from 400 to 700°C, a pressure of between 2 and 4 MPa, and a molar ratio between H₂O/charge ranging from 3 to 6.

Claim 2 (Currently Amended): The process according to claim 1, wherein the catalytic hydrodealkylation reaction is carried out in the presence of water, previously vaporized and mixed with the hydrocarbon fraction in gas phase before the reactor inlet, or added to the liquid hydrocarbon fraction until its saturation at room temperature, or by a compound miscible with the charge and capable of releasing ~~[[it]]~~ the water during the reaction.

Claim 3 (Currently Amended): The process according to claim ~~[[1]]~~ 2, wherein the compounds capable of releasing water and generating aliphatic and/or aromatic hydrocarbon species of the same nature as those present in the liquid and gaseous phase of the reaction, are alcohols, ethers, esters, or their mixtures.

Claim 4 (Original): The process according to claim 3, wherein the compounds are ethanol or phenethyl alcohol.

Claim 5 (Currently Amended): The process according to claim 1, wherein the molar ratio between water and charge in the feeding to the reactor, ranges from 0.0006 to 0.16; ~~preferably from 0.003 to 0.032.~~

Claim 6 (Currently Amended): The process according to claim 1, wherein the hydrodealkylation reaction takes place at temperatures ranging from 450 ~~to 600°C~~ to 600°C, pressures ranging from 2.8 to 3.6 MPa, H₂/charge molar ratios ranging from 3.8 to 5.2, and with such reagent flow-rates as to guarantee an ~~LHSV~~ LHSV (Liquid Hourly Space Velocity), calculated on the hydrocarbon stream, ranging from 3 to 5 h⁻¹, preferably from 3.5 to 4.5 h⁻¹.

Claim 7 (Currently Amended): The process according to claim 1, wherein the hydrocarbon charge subjected to hydrodealkylation comprises one or more C₈-C₁₃ alkylaromatic compounds selected from the group consisting of ethylbenzene, xylenes, propylbenzenes, ethyltoluenes, trimethylbenzenes, diethylbenzenes, ethylxylenes, tetramethylbenzenes, propyltoluenes, ethyltrimethylbenzenes, triethylbenzenes, and dipropyltoluenes.

Claim 8 (Original): The process according to claim 7, wherein the C₈-C₁₃ alkylaromatic hydrocarbon charge derives from reforming units or from units which effect pyrolytic processes, or from steam-cracking.

Claim 9 (Previously Presented): The process according to claim 1, wherein the hydrocarbon charge subjected to hydrodealkylation comprises C₈-C₁₃ alkylaromatic compounds optionally mixed with C₄-C₉ aliphatic and cycloaliphatic products and organic compounds containing hetero-atoms.

Claim 10 (Currently Amended): The process according to claim 1, wherein the catalyst consists of a ZSM-5 zeolite in bound form, with one or more binders selected from the group consisting of aluminas, ~~among which~~ pseudo-bohemite, and γ -alumina; clays, ~~among which~~ kaolinite, smectites, and montmorillonites; silica; aluminosilicates; titanium oxides; [[and]] zirconium oxides; and mixtures thereof, with zeolite/binder weight ratios ranging from 100/1 to 1/10.

Claim 11 (Currently Amended): The process according to claim 1, wherein the ZSM-5/binder catalyst is modified with at least one metal selected from the group consisting of a metal of group IIB, a metal of group VIB and a metal of group VIII ~~those belonging to groups IIB, VIB and VIII.~~

Claim 12 (Original): The process according to claim 11, wherein the metal is molybdenum.

Claim 13 (Currently Amended): The process according to claim 1, wherein the ZSM-5 zeolite ~~is characterized by~~ has an Si/Al molar ratio ranging from 15 to 30.

Claim 14 (Previously Presented): The process according to claim 1, wherein the dispersion of metals on the catalyst is carried out by impregnation, ion exchange, vapor deposition or surface adsorption.

Claim 15 (Currently Amended): The process according to claim 1, wherein the ZSM-5 zeolite is impregnated with one or more of the metals of groups IIB, VIB and VIII by the steps of:

- preparing one or more solutions of compounds of the metals;
- impregnating the zeolite with the above solutions;
- drying the impregnated zeolite;
- calcining the zeolite at temperatures of between 400 and 650°C; and optionally repeating the above steps one or more times.

Claim 16 (Original): The process according to claim 15, wherein the dispersion of the metals on the catalyst takes place by impregnation with an aqueous or aqueous-organic solution, the organic solvent being selected from alcohols, ketones and nitrites or their mixtures, containing at least one hydro- or organo-soluble compound of the metal in such concentrations that the total final content of the metal in the catalyst ranges from 0.1 to 10% by weight.

Claim 17 (Previously Presented): The process according to claim 1, wherein the total metal content in the catalyst ranges from 0.5 to 8% by weight.

Claim 18 (New): The process according to claim 1, wherein the molar ratio between water and charge in the feeding to the reactor ranges from 0.003 to 0.032.

Claim 19 (New): A process for the catalytic hydrodealkylation of a hydrocarbon composition, comprising:

continuously hydrodealkylating a hydrocarbon composition comprising one or more C₈-C₁₃ alkyl aromatic compounds;

wherein the hydrodealkylating includes contacting the C₈-C₁₃ hydrocarbon composition with a catalyst in the presence of water;

wherein the catalyst is a ZSM-5 zeolite having a molar ratio Si/Al of from 5 to 35 and wherein the catalyst is modified with at least one metal selected from the group consisting of a metal of group IIB, a metal of group VIB, and a metal of group VII;

wherein the hydrodealkylating is carried out at a temperature of from 400 to 700°C, a pressure of from 2 to 4 MPa and a molar ratio H₂O/C₈-C₁₃ hydrocarbon composition of from 3 to 6.

Claim 20 (New): The process according to claim 19, wherein the hydrodealkylating is carried out without transalkylating, isomerizing, disproportioning or condensing the C₈-C₁₃ hydrocarbon composition.